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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/711,859
Filing Date: October 11, 2004
Appellant(s): RATNAKAR, NITESH

Kenneth W. Jarrell
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed February 16, 2010 appealing from the Office action mailed November 11, 2009.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

1, 3, 10, 12, 13, 15, 16, 43, 44, 54-57 and 61-74.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN

REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

5,178,130	Kaiya	1-1993
6,482,149	Torii	11/2002
6,066,090	Yoon	5-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims (the letters match those in Appellant's section VI of the brief):

A. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 1, phrase "the second lens selectively positionable with the distal end of the shaft in the second position" (lines 16-17) is confusing since the second lens is recited as being coupled to the catheter (as opposed to the "shaft" of line 2). It appears that the word "shaft" should more properly be --catheter--.

B. Claims 1, 3, 10, 12, 13, 43, 44, 54-57, 61-63, 66-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaiya (U.S. Pat. 5,178,130) in view of Torii (U.S. Pat. 6,482,149).

As to claims 1, 54 and 55, Kaiya discloses a shaft/endoscope (6a, Fig.2) extending along a longitudinal axis and having distal and proximal ends (13a,15a, Fig.2) and defining a hollow channel therethrough (16); a first image lens (28a, Fig.1) selectively positioned adjacent to the distal end of the insertion tube for receiving a first image in a first direction, the first direction being a generally forward circumferential view that is parallel to the longitudinal axis of the shaft (note Fig.1); a catheter (endoscope 2b) receivable in the hollow channel of the shaft for extension and retraction relative to the distal end of the shaft (note Fig.2, col.3, lines 46-54), the catheter including a distal end (13b), proximal section (15b) and a bending section (14b) interposed between the distal and proximal ends; and a second image lens/rear view module (28b, Fig.1) coupled to the distal end of the catheter (Fig.1), the second image lens selectively positionable with the distal end of the catheter in a second direction with respect to the first image lens when extending beyond the first lens so as to receive a second image in the second direction. Kaiya teaches that both the shaft (6a) and catheter (2b) comprises curvable sections (14a,14b, col.3, lines 40-45), as opposed to merely a flexible section (15a,15b). The Examiner takes the position that this 'curvable section' anticipates a steering/actuation mechanism which will actively allow curving in a desired direction and thus allow the second direction to be at a predetermined angle to the first direction. Furthermore, insertion of the distal end (13b) of the catheter (2b) through and out of channel (16) anticipates the second lens having the capability of being selectively independently advanced generally parallel to the longitudinal axis relative to the first lens.

Clearly, both the shaft and catheter of Kaiya are capable of being curved but since Kaiya fails to provide any particulars as to the curvable sections of the endoscope/catheter, the angle to which they can be flexed is not ascertainable. Torii is one of many references which evidences what is known in the endoscope art. Torii teaches an actuator mechanism for bending the curving section (22, Fig.1) of an endoscope in four perpendicular directions comprising at least first and second wires (54, Fig.2, col.9, lines 23-25). The curving section can be bent well over 180 degrees from the longitudinal axis (Fig.19). Given the lack of disclosure as to the particulars of the curvable section in Kaiya, it would have been obvious to one of ordinary skill in this art to have turned to the prior art to "fill in the gaps" when reducing the Kaiya device to practice. Indeed, use of the known curvable section as taught by Torii for the curvable section of Kaiya would have been part of the ordinary capabilities of a person skilled in this art. Use of such known curvable part would allow the angle between the first direction and second direction to be at least 180 degrees, increasing the view capability and providing the catheter (2b) the ability to be directed at a target that would not be accessible to the shaft (6a).

As to claim 3, since the first and second lenses are used simultaneously (Fig.2), they inherently receive images simultaneously.

As to claims 10 and 56, and as mentioned above, the Examiner takes the position that, in order to be 'curvable', each of the endoscope and catheter shafts must inherently have some kind of active mechanism to provide the curvable function. This mechanism would anticipate an 'actuator' as broadly as claimed. However, the teachings of Torii also teach an actuator whose wires extend to the distal end of the catheter.

As to claims 12 and 61, note imaging device (29b) and processor (32b) in Figure 1.

As to claims 13 and 62, display screens (5a,5b) constitute a display screen for displaying the first and second images. Also note col.9, line 66 to col.10, lines 4.

As to claim 43 and 57, the curvable section/actuator taught by Torii include first and second wires (54, Fig.2), the distal ends of which, alone or in combination with the inner structure that is bent (e.g., links 40, Torii), constitute bending structure.

As to claim 63, Kaiya teach that the both endoscopes (2a,2b) can be fiberscopes with externally fitted camera (col.9, lines 61-65). As evidenced by Karasawa et al. (U.S. Pat. 5,196,928), a fiberscope with external camera (2b, Fig.5 of Karasawa et al.) includes an eyepiece (9d, Fig.5, col.5, line 63 to col.6, line 24).

As to claims 44, 66 and 67, the wires (54) of Torii would anticipate a "bending structure disposed at the distal end of the catheter" that "urges the catheter into the second direction upon exit from the hollow channel".

As to claim 68, the wires (54) taught by Torii anticipate "cables".

As to claims 69 and 70, the diameter of catheter (2b) can constitute a maximum outer dimension, even when measured perpendicular to the axis and when the catheter is bent. Such dimension is inherently less than the outer diameter of the shaft.

As to claims 71 and 72, as set forth above, the first and second lenses are capable of providing different views (e.g., forward, rearward) due to the capability of the catheter to be flexed. Since there is no indication that imaging can not occur during movement (e.g., insertion) of the endoscope/catheter of Kaiya and it would not be reasonable to doubt that it could occur, then the Kaiya reference is capable of imaging during movement.

As to claims 73 and 74, since the catheter would be capable of up to 180 degrees of bending, the combination is capable of viewing two different tissues (even 90 degrees could accomplish this).

C. Claims 15, 16, 64 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaiya in view of Torii, as set forth above, and further in view of Yoon (6,066,090).

Kaiya in view of Torii disclose the device as described above and that the illumination for both the endoscopes (2a,2b) is provided by an optical fiber waveguide (17a,17b). Thus, Kaiya fails to disclose one or more illumination bulbs disposed on the distal tip of the catheter. Yoon et al. discloses a similar endoscope system in which either of the endoscopes (14, 16 or 18) can include an optical wave guide for illumination (similar to Kaiya) but alternatively can include LEDs or incandescent bulbs located at the distal end (col.5, lines 1-12). Since both Kaiya and Yoon teach endoscope devices and illumination sources, it would have been obvious to one of ordinary skill in the art to have substituted one alternative illumination arrangement for another to achieve the predictable result of providing illumination to the field of view. One would be motivated to use an illumination bulb (e.g., LED) at the distal end to eliminate the need optical fibers to extend through the shaft, which fibers attenuate (degrade) light and are capable of breaking.

Inherently, use of any electrical bulb source (i.e., LED) will require a connection to a power source.

D. Claims 1, 3, 10, 12, 13, 15, 16, 43, 44, 54-57, 61, 62, 64-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon (U.S. Pat. 6,066,090).

Yoon discloses a shaft/endoscope (12,14, Fig.1) extending along a longitudinal axis (e.g., z-axis in Fig.4) having a distal end (14) and a proximal end (12) comprising a first lens (36, Fig.2) fixedly attached at the distal end which can receive a first image of a forward direction (in the condition that it is not bent, note 44 Fig. 8 for example, it would be along the longitudinal axis) and a catheter (18, Figs.1,2) including a distal end (24), a proximal end (at 25, Fig.1) and a bending section (see below) and further including a rear view module/second lens (36 on 18) for simultaneously receiving a second image at a predetermined angle to the first direction (in the condition that it is bent, note 46 in Figure 4 for example). The catheter (18) is receivable in a hollow channel (note channel of shaft 12 that accommodates 18, Fig.1). The distal end of the shaft (14) and the catheter (18) are independently steerable via an actuator up to approximately 180 degrees (note col.5, line 51 to col.6, line 34, which incorporates Shockey, U.S. Pat.5,168,864 and Hibino et al., U.S. Pat. 4,982,725, by reference as showing a suitable steering control mechanisms; note col.2, lines 20-30 of Shockey which teaches 180 degree deflection; and Figure 1, elements 10 and 13 of Hibino et al., col.8, lines 4-22 which show multiple control wires and bending in four perpendicular directions). Any of the steering mechanisms disclosed or incorporated by reference by Yoon would anticipate a "bending structure disposed at the distal end of the catheter" that "urges the catheter into the second direction upon exit from the hollow channel". Note that all lenses operatively connect to an image processor (26) and monitor (27) (Fig.1). The rear view module can include a LED (54b) which is a "bulb" and requires a power source. Steering up to 180 degrees (mentioned above) would conceivably allow for different

images to be simultaneously obtained. There is no logical reason to believe that the Yoon device is not capable of producing images during movement of the entire device or any one or more of the branches. The diameter of branch (18) can constitute a maximum outer dimension, even when measured perpendicular to the axis and when the catheter is bent. Such dimension is inherently less than the outer diameter of the shaft (12).

It would appear that, due to the fact that each endoscope branch (14, 16 and 18, Fig.1) is individually and separately steered **and** individually rotatable about their respective longitudinal axes (col.4, lines 27-37), and the fact that no structure is disclosed that secures the branches in any particular manner to the shaft (12, Fig.1), that each endoscope branch would be capable of extension and retraction with respect to the shaft (12). However, Yoon fails to explicitly mention such capability. If not inherently contemplated by Yoon, it would have been obvious to one of ordinary skill in the art to have allowed the endoscope branches (14,16,18, Fig.1) to also be capable being moving in the direction of the longitudinal axis, and more advantageously, independently movable in that direction. This would provide an extra degree of freedom to the independently steerable and rotatable branches, thus making each branch easier to maneuver as desired. Therefore, this would anticipate the limitation of the catheter being reversibly received within the channel of the shaft or receivable in the shaft for independent extension or retraction generally parallel to the axis of the shaft.

(10) Response to Argument

Although Appellant's arguments do not follow the listing order (A through D) of the grounds of rejection set forth in the beginning of Appellant's section VI (which has been

maintained above in the Examiner's section 9), the Examiner will follow such order for easy understanding and comparison of the arguments with the grounds of rejection. The Examiner will attempt to address each 'issue' (a through m) that is also set forth in Appellant's section VI as it applies to each ground of rejection.

In addition, it appears from the first paragraph of section VII of Appellant's brief that claims 1, 10, 54 and 56 are the only claims individually argued. The Examiner will only focus on these claims, assuming that the remaining claims stand or fall together with claims 1, 10, 54 and 56.

A. WHETHER CLAIM 1 IS INDEFINITE UNDER 35 U.S.C. 112, SECOND PARAGRAPH

Starting at section VII, subheading B, item 1 (page 8 of brief), which corresponds to Issue (a), Appellant reiterates the Examiner's rejection and argues that the disputed language is clear and intentional. Specifically, Appellant argues that the *intended* meaning encompasses the second lens being positioned "relative to shaft 1". It is the Examiner's position that such *intended* meaning is accurate, was recognized by the Examiner and is the basis for the rejection under 112, second paragraph.

Claim 1 recites "the second lens selectively positionable ***with the distal end of the shaft*** in the second position so as to receive a second image in a second direction". Note that this describes the movement of the *catheter* (51) between the position shown in Figure 18 and the position shown in Figure 19. The distal end of the shaft (14) does not move or is not repositioned between Figures 18 and 19. Thus, the second lens (52, Fig.17), which is fixed to the distal end of the *catheter*, does not move **with** the distal end of the shaft but instead moves ***with***

the distal end of the catheter when being positioned in the second position (Fig.19). The Examiner suggested changing the word "shaft" with "catheter" to reflect this. Alternatively, the language could have been changed to recite that the second lens is selectively positionable ***with respect to the distal end of the shaft*** or ***relative to the distal end of the shaft***. This language is equally as accurate to describe movement of the second lens to the second position.

The Examiner takes the position that the common meaning of "with" implies "together with" or "along with" which does not accurately or inherently describe or even imply the intended meaning of "relative to" or "with respect to". For this reason, the Examiner has maintained this rejection.

B. WHETHER CLAIMS 1, 3, 10, 12, 13, 43, 44, 54-57, 61-63 AND 66-74 ARE UNPATENTABLE UNDER 35 USC 103 OVER KAIYA IN VIEW OF TORII

Appellant's arguments with respect to this ground of rejection begin on page 13 at Issue (f) and continue to page 17, Issue (l). These arguments pertain to claims 1 and 54.

ISSUE (F)

In this section (starting on page 13), Appellant acknowledges structural features of Kaiya that were recognized by the Examiner and are analogous to portions of Appellant's claimed invention. Particularly, parent scope (2a) of Kaiya, which includes shaft (6a) and lens (28a, Fig.1), was equated by the Examiner to Appellant's "shaft" and "first lens" in the claims. The first lens views forward of the distal end of the shaft, which is parallel to the longitudinal axis, and thus provides the first image in the first direction.

Appellant states that "Kaiya makes no mention of taking anything but a forward view from the outer endoscope 2a". The Examiner agrees and points out that Appellant's claims also make no mention of the first lens taking anything but a forward view from the shaft. Appellant further states that Kaiya does not "discuss any mechanism for manipulating the outer endoscope such that a view other than a forward view (relative to the portion 13a) may be taken". The Examiner agrees and accordingly points out that there is also no mechanism in Appellant's disclosure or claims that moves the lens (20, Fig.19) relative to the shaft (14) such that a view other than a forward view with respect to the shaft may be taken.

Accordingly, it appears that everyone is on the same page with respect to Issue (f).

ISSUE (G)

In this section (starting on page 14), Appellant attempts to show that the two endoscopes of Kaiya (2a,2b, which correspond to the shaft and catheter of the claims) can ONLY view the same tissue. *Although not specifically stated*, it is assumed that this is an attempt to evidence that the endoscope (2b) would not provide a second image in a second direction as claimed. However, the Examiner finds error in Appellant's interpretation of the Kaiya reference, such error providing no evidence that the endoscope (2b) would not provide a second image in a second direction.

Appellant accurately acknowledges that the complexities of the Kaiya invention relate to synchronizing the illumination timing and imaging device drive timing to prevent image deterioration in the event that illumination/imaging function from one endoscope (2a) is interfering with the other endoscope (2b). For those not skilled in the endoscope art, it should be

noted that all this means is that the same color illumination and same image device timing[1] will occur substantially at the same time (i.e., be synchronized) in each endoscope. This is generally pointed out in column 5, lines 18-38 of Kaiya.

Even though each endoscope is synchronized, each endoscope functions independently to acquire its own image with no effect from the other endoscope (note Kaiya, col.4, lines 32-39, where "i" after a element numeral refers to both "a" and "b", col.3, line 40). In other words, both endoscopes do not have to be imaging the same tissue for each to be able to provide an image. In fact, each endoscope will simultaneously function properly to provide its own image even when the endoscopes are pointed in opposite directions or used separately. Therefore, the second endoscope (2b) of Kaiya is more than capable of providing a second image in a second direction.

Appellant states on page 14 of the brief that in Kaiya, "the two videoscopes are synchronized such that a first videoscope may output green light which is reflected by tissue for a specific image of the tissue to be taken by the first videoscope, and thereafter (sequentially) the green light and the first endoscope is turned off and the second videoscope may output the red light which is reflected by the **same tissue** for a specific image of the tissue to be taken by the second videoscope". A careful reading of the passage cited by Appellant (col.5, line 45 to col. 7, line 53) in no way supports such functioning by the endoscopes of Kaiya. It appears that Appellant has misinterpreted column 7, lines 35-48 which actually states that such functioning is prevented:

> According to this first embodiment, by the synchronizing signal from the parent side camera controller 4a, **the parent**

[1] Briefly, an endoscope imaging device operates according to a cycle of collecting light to form signals in one time period and transferring the signals to processing circuitry in another period. This cycle is performed for each of three colors of light (red, green and blue) transmitted by the illumination device. This is exemplified for the red (R) color in col.5, lines 1-11 of Kaiya.

side and son side illuminating systems and signal processing systems (including the driving systems) are to be all synchronized. The case that, while one side is outputting an SID driving signal, the other is illuminating, that is, the case that such matter deteriorating the picture quality as a smear or blooming occurs **can be prevented.** The case that, for example, **one side is illuminating with an R light but the other side is illuminating with a G light** so that the color balance may be broken and the color reproductivity may deteriorate **can be also prevented.** Thus, the cause of deteriorating the picture quality can be excluded.

(emphasis added).

Therefore, the Examiner maintains the position that Kaiya discloses the structure that is capable of providing a second image in a second direction and therefore meets the claim limitations.

ISSUE (H)

In this section (starting on page 14), Appellant argues that the 35 U.S.C 103 rejection involving Kaiya is improper due to the contention that Kaiya cannot be modified using Torii or any other reference such that the endoscopes take views from opposite directions. The basis for this contention relies on Appellant's belief that the endoscopes of Kaiya absolutely must be viewing the same tissue at all times, which is its alleged sole intended purpose.

The Examiner agrees that ONE clear intended purpose of the Kaiya invention is to prevent deterioration of image quality by preventing interference between light colors from the light source (Kaiya, col.1, line 61 to col.2, line 4). However, the Examiner does not agree with Appellant's **unsupported conclusion** that the illumination, and thus the image direction, of each endoscope MUST be directed at the same tissue. Kaiya NEVER mentions that each endoscope must be imaging the same tissue. It is not unreasonable to recognize that the illumination light

from each of the endoscopes can interfere even when not originating from the same direction (e.g., reflectivity from all directions). For instance, if one walks into a small, completely dark room, turns on a flashlight, faces one direction, and points the flashlight in a opposite direction, one will still be able to see in the direction in which one is facing due to reflection of the light. Kaiya does not specify that interference between illumination of each endoscope ONLY occurs when the endoscopes are pointing in the same direction and hence, imaging the same tissue.

Since the Examiner has evidenced immediately above (including the remarks in Issue g) that Kaiya does not explicitly restrict the device to taking views from the same direction and that the endoscopes are quite capable of generating independent images of any view in front of each endoscope (which would include views in opposite directions), this argument is rendered moot.

It is noted that claims 1 and 54 are apparatus claims, not method claims. Kaiya does not have to teach the method or intended use of taking views in opposite directions, but does have to teach structure that is capable of such in order to meet the limitations of Appellant's apparatus claims.

ISSUE (I)

In this section (starting on page 15), Appellant alleges that the Examiner does not understand *In re Gordon*. Since the Examiner never previously mentions, discusses or claims to understand *In re Gordon*, the Examiner will not comment.

ISSUE (J)

No comment.

ISSUE (K)

In this section (starting on page 16), we finally get into the merits of the rejection involving Kaiya. To review, the Examiner contends that Kaiya teaches that both endoscopes comprise a curvable section (14a,14b, col.3, lines 40-45), as opposed to merely a flexible section (15a,15b). The Examiner takes the position that this 'curvable section' anticipates a steering/actuation mechanism which will actively allow curving in a desired direction and thus allow the second direction to be at a predetermined angle to the first direction. Appellant understandably takes issue with the Examiner's interpretation of the "curvable section" as inherently describing an actively bendable portion (as opposed to a passively flexible portion) of the endoscope shaft. Specifically, Appellant takes issue with the Examiner's use of 'inherency' to extrapolate into the Kaiya reference a mechanism for actively curving the curvable section.

However, Appellant's concern appears to be based on unfamiliarity of the prior art. Endoscope shafts are either rigid or flexible. Of the flexible ones, the shafts are either entirely flexible in a passive sense (e.g., require external forces to bend or curve) or include a mechanism to allow active curving of the distal end portion (e.g., Bowden cables). When an active mechanism for curving the distal portion is provided, the remaining proximal portion is passively flexible. When describing an endoscope shaft that is entirely flexible in a passive sense, the prior art does not distinguish between sections (i.e., flexible section and curvable section) since the entire shaft follows the same characteristic (i.e., passively flexible). However, the prior art (especially patents issued to Japanese applicants around the same time period as the Kaiya reference) specifically distinguishes between a passively flexible section and an actively

curvable section due to the fact that the curvable section includes a mechanism to actively bend such section. The Examiner notes Takahashi (U.S. 4,203,430) and Okada (U.S. Pat. 4,726,355)[2] as evidence of the ordinary terminology and meaning of terms in the endoscope art related to endoscope shafts. Thus, the Examiner takes the position that there is a reason for Kaiya to distinguish between the flexible section of the shaft and the curvable section, such reason inherently implying an active curving mechanism.

The Examiner is aware that inherency can not be established based on possibilities or probabilities. However, this is not a question of "possibilities or probabilities". One of ordinary skill in the endoscope art who reads the Kaiya reference would have immediately understood that the act of distinguishing between a flexible section and a curvable section in an endoscope disclosure constitutes setting forth the difference between a passively flexible section and an actively flexible section. Even still, just in a logical sense, one of less than ordinary skill would have logically concluded that the curvable section is not JUST flexible, lest it would have been encompassed by and called a 'flexible section'.

Regarding Appellant's argument that there is nothing in Kaiya to suggest that the endoscope (2b) is steered such that different tissue may be viewed (page 17, first full paragraph), Appellant is reminded again that a method step of viewing different tissue is not being claimed, only structure capable of providing this feature is being claimed. And again, it is pointed out that imaging different tissues does not "run against" the teachings of Kaiya.

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[2] In Okada ('355), note difference between flexible insertion part (2) and curvable part (10, col.3, line 8-12) in Figure 2 (note col.3, lines 15-62 which describe the active curving mechanism for curvable part 10). In Takahashi ('430), note difference between flexible connecting pipe (2) and curvable end section (3, described as curvable end section in col.3, lines 26-30 and in claim 1) in Figure 1. The details of the active mechanism for the curvable end section (3) appear in col.3, lines 15-34.

Regarding Appellant's discussion on page 17, second full paragraph, Appellant takes the words "could occur" out of context from the Examiner's arguments (note page 9, Final Rejection mailed November 13, 2009) and attempts to fit them into a template of case law. Since it is clear that the Examiner's words were describing something completely different (i.e., interference of illumination light), the Examiner considers this discussion moot.

ISSUE (L)

In this section (starting on page 17), Appellant reiterates the concern regarding the inherent features derived from a curvable section, as opposed to a flexible section. As pointed out above in Issue (k), the basis for the Examiner's position that the curvable section inherently anticipates a steering actuation mechanism relies on known terminology and knowledge in the endoscope art.

Confusingly, Appellant suggests that while endoscope (2a) **may be steered**, endoscope (2b) (the catheter in the claims) would not be and would have to be undesirably modified to do so (brief, page 17, second to last line to page 18, line 5). As pointed out by the Examiner, Kaiya specifically teaches that **both** endoscopes (2a,2b) include a curvable section (14a,14b, col.3, lines 40-45) connected to the flexible section. Therefore, there is no indication or suggestion that only endoscope (2a) is steered and endoscope (2b) is not. The Examiner takes the position that both endoscopes are explicitly taught to be capable of being steered.

Appellant further alleges that the Examiner "recognizes that Kaiya does not teach that "curvable" is "steered" in page 3, line 21 to page 4, line 1 by stating that one would need to "fill in the gaps" to modify the curvable portion of Kaiya to become a steered portion". This

statement is not well taken by the Examiner. Either Appellant has not carefully read the Examiner's rejection or is intentionally distorting the Examiner's comments to make them appear contradictory to their intended meaning. The Examiner hopes it is the former.

Although the Examiner assumes that the Board understands the Examiner's rejection, it is noted that the "gaps" in the disclosure of Kaiya that are being filled relate only to the *extent by which the curvable section can be bent.* This is clearly evidenced by the statement in the rejection:

"Clearly, both the shaft and catheter of Kaiya are capable of being curved but since Kaiya fails to provide any particulars as to the curvable sections of the endoscope/catheter, the angle to which they can be flexed is not ascertainable."

Thus, it is clear that the Examiner is not structurally modifying the Kaiya reference by adding a steerable section but is merely clarifying details ("gaps") of such steerable section that were not deemed critical to the Kaiya invention and would have been obvious to one of ordinary skill in the endoscope art. It is also clear by use of the Torii reference that the Examiner is NOT clarifying such details with Appellant's disclosure.

One of ordinary mechanical skill would readily recognize that the extent, for example, 180 degrees, by which the distal end of an endoscope can be curved relative to the proximal end is merely a factor of the length of the curvable section and the maximum radius of curvature. Since these details are missing in the Kaiya reference, the Examiner cited Torii to evidence that one of ordinary skill would recognize that endoscopes are typically constructed to allow 180 degree bending.

ISSUE (M)

This section (starting on page 18) relates to claims 10 and 56. It appears that Appellant, notwithstanding the logical implication of distinguishing between a curvable section and flexible section in an endoscope as well as the art-accepted terminology relating to active curvable sections, believes that the word 'curvable' should be interpreted as implying ONLY a passive bending capability. As pointed out above, specifically relating to Issue (k), such interpretation would run against conventional logic and against an ordinary understanding and knowledge of the prior art.

Regarding claim 10, Appellant appears to suggest that the structure gleamed from the teaching of a "curvable" section in Kaiya, specifically a mechanism for actively curving the curvable section, does not meet the limitation of an "actuator". However, the broadest reasonable interpretation of the term "actuator" is an element that moves another element. Thus, a mechanism for actively curving the curvable section would most definitely meet the limitation of an "actuator".

Appellant further argues that even if the Examiner is correct in his interpretation of the 'curvable section', then "both the inner endoscope and outer endoscope would not require an active mechanism to steer both endoscopes" (page 18, second full paragraph under Issue (m)). Whether this is true or not is a matter of opinion and does not relate to the merits of the rejection since it is explicitly pointed out in Kaiya that BOTH endoscopes have curvable sections.

C. WHETHER CLAIMS 15, 16, 65 AND 66 ARE UNPATENTABLE UNDER 35 USC 103 OVER KAIYA IN VIEW OF TORII AND FURTHER IN VIEW OF YOON

Appellant does not provide arguments directed to this rejection and thus the Examiner has no comment.

D. WHETHER CLAIMS 1, 3, 10, 12, 13, 15, 16, 43, 44, 54-57, 61, 62 AND 64-67 ARE UNPATENABLE UNDER 35 USC 103 OVER YOON

Appellant's arguments with respect to this ground of rejection begin on page 10 at Issue (b) and continue to page 13, Issue (e). These arguments pertain to claims 1 and 54.

ISSUE (B)

In this section (starting at page 10), Appellant takes issue with the Examiner's interpretation the shaft of Yoon as it relates to the claimed shaft. Since Appellant uses claim 1 for comparison, the Examiner will do the same.

It appears that the point of contention is that Appellant doesn't believe that elements (12) and (14) meet the limitations of the claimed shaft and particularly that element (14) can not be considered the distal end of the claimed shaft[3]. The Examiner notes that there is nothing in the description of the shaft in claim 1 that precludes element (14) from constituting the distal end of shaft (12). Element (14) is coupled to and extends from shaft (12) in the distal direction (note Fig.1) and is capable of being received in a hollow organ. Furthermore, the proximal end (12) of the shaft (12,14) of Yoon defines a hollow channel (hollow space extending through end 12 that accommodates catheter 18, Fig.1). Thus, elements (12) and (14) explicitly meet the limitations

[3] For reference, it is noted that the word "distal" in this art conventionally refers to the portion further away from the person using the device, such portion being inserted into a hollow organ. The "proximal" end is the opposite end from the distal, being closer to the person using the device.

of "a shaft extending along a longitudinal axis, having a distal end receivable in a hollow organ and a proximal end and defining a hollow channel therethrough".

As set forth above, Appellant has not defined the claimed shaft in any way so as to read over the combination of elements (12) and (14) of Yoon. For instance, the shaft could have been defined as having a continuous and constant diameter extending from the proximal-most end the distal-most end. In addition, the hollow channel could have been defined as extending from the proximal-most end to the distal-most end of the shaft. Either of these limitations would define over the combination of elements (12) and (14) of Yoon. However, even though Appellant had the opportunity to amend the claims to distinguish the shaft from that of Yoon, Appellant chose not to. Therefore, the Examiner has maintained what he considers as a proper interpretation of the claimed shaft.

ISSUE (C)

In this section (starting on page 11), Appellant argues that the distal end of the shaft is not steerable as claimed. The argument is based on Appellant's overly narrow reading of the "shaft" of claim 1 as only element (12) in Yoon. As set forth above with respect to Issue (b), element (14), which is taught in Yoon to be steerable by a steering mechanism (note rejection), is properly construed as the distal end of the shaft. Thus, the Examiner maintains that Yoon does indeed disclose "a steering mechanism for moving the distal end of the shaft" (claim 1) and "a distal end...having a steering mechanism to deflect the distal end" (claim 54).

ISSUE (D)

In this section (starting on page 12), Appellant states that the Examiner incorrectly contends points out that Yoon teaches the first lens (36) fixedly attached to the shaft (12). Again, this is based on Appellant's overly narrow reading of the "shaft" in claim 54. Instead, the Examiner correctly states that Yoon teaches that the first lens (36) is fixedly attached to the distal end (14) of the shaft (12,14), as shown in Figures 1 and 2 of Yoon. Thus, the Examiner maintains that Yoon does indeed disclose "a shaft having a distal end for fixedly receiving the first lens".

ISSUE (E)

In this section (starting on page 12), Appellant argues that Yoon does not teach that the endoscope branches are independently advanced, and thus do not meet the limitations of claim 1 and 54 concerning the independent advancement of the second lens/catheter with respect to the first lens. The Examiner agrees since this just happens to be the basis for the rejection under 35 USC 103.

The Examiner acknowledges that Yoon does not explicitly disclose that endoscope branch (18), which reads on the second lens/catheter in the claims, advances independently with respect to endoscope branch (14) and tube (12), which reads on the shaft of the claims. *Contrary to Appellant's contention, Yoon further does not explicitly disclose that the endoscope branches (14) and (18) are advanced simultaneously.* Appellant states this and cites column 6, lines 59-66 of Yoon but careful reading of those lines of Yoon clearly set forth the capability of the

endoscope branches to simultaneously view a surgical site, and not simultaneous advancement of the branches.

So Yoon teaches that the endoscope branches are advanced (Yoon, col.4, lines 47-57) but does not specify whether they can be independently advanced or they are simultaneously advanced. The Examiner takes the position that due to the fact that each endoscope branch (14, 16 and 18, Fig.1) is individually and separately steered **and** individually rotatable about their respective longitudinal axes (col.4, lines 27-37), and the fact that no structure is disclosed that secures the branches in any particular manner to the shaft (12, Fig.1), that each endoscope branch would be capable of extension and retraction with respect to the shaft (12). However, since Yoon fails to explicitly mention such capability, it would be obvious to provide such capability (note rejection).

Appellant further argues that if such modification was made to the Yoon device, the entire device would be wholly unsuitable for the intended purpose of Yoon. However, Appellant fails to elaborate on how adding an extra degree of freedom to the endoscope branches so that it is easier to maneuver the branches to a desired position will alter the functioning of the Yoon device, and specifically alter it enough to make it unsuitable for viewing a surgical site. The Examiner takes the position that such modification does not diverge from the intended purpose of Yoon but merely enhances the capabilities for providing the intended purpose. Therefore, the Examiner takes the position that the 35 USC 103 rejection over Yoon is proper.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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